

POST-PRINT

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Title:

Mull it over: Cannabis Vaporisers and Harm Reduction: Commentary on Budney et al: Vaping Cannabis: Parallel Concerns to E-Cigarettes?

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Concise statement: Legalisation of cannabis is likely to lead to greater use. Balanced regulation of potentially less harmful modes of administration, such as vaporisers is needed. Further research is warranted not only on the direct health effects of vaping cannabis, but also on its potential to decrease co-administration of tobacco with cannabis.

Budney et al (1) argue that cannabis vaporisers should also be regulated similarly alongside ‘e-cigarettes’, i.e. vaporisers typically used with nicotine. Indeed, the distinction between what is an e-cigarette and what is a cannabis vaporiser is increasingly blurry as many vaporisers come with interchangeable attachments for vaping e-liquids, waxes or oils and loose-leaf (or ‘dry herb’). There has also been some overlap between the tobacco and vaporiser industries with Japan Tobacco International being a partner-investor from 2011 to 2015 in the U.S. vaporiser company, Ploom.(2, 3) Few would argue that many of the regulatory options being discussed for e-cigarettes are not equally appropriate for cannabis vaporisers, such as restricting sales to adults and curtailing aggressive marketing, especially directed at young people.

The legalisation of cannabis use in several jurisdictions is likely to increase cannabis use as its availability and social acceptability as a legal substance increases. In the context of a growing cannabis market, careful consideration needs to be given to how we regulate all aspects of the market, including new delivery systems like vaporisers. The challenge will be to strike an optimal regulatory balance between ensuring vaporisers are truly harm-reducing at both the individual and population level and potentially discouraging use of a less harmful alternative in favour of more harmful delivery modes involving combustion. Over-regulation of cannabis vaporisers could replicate the perverse regulatory situation for tobacco and nicotine in jurisdictions like Australia, where the most harmful nicotine products (combustible cigarettes) are the least regulated, while some less harmful products (e-cigarettes and snus) are banned from sale.(4) Restricting access to less harmful options while freely allowing more harmful consumption methods raises many ethical concerns and may be detrimental to public health.(5)

Budney et al raise the possibility that vaporiser use may result in more frequent cannabis and tobacco administration “to the extent that vaping devices promote smoking a tobacco-cannabis mixture”.(1) However, there is another possible alternative scenario that deserves consideration, namely, that vaporiser use may reduce the practice of adding tobacco to cannabis, known as

mulling. Mulling is the most common way to use cannabis in many countries.(6, 7) Mulling appears to contribute to the high prevalence of tobacco smoking observed among cannabis users and is also a potential gateway to tobacco smoking among young people.(8, 9) Co-administration of tobacco with cannabis could be more harmful than use of each substance alone because cannabis smokers take longer, deeper inhalations that increase exposure to tars. The reasons cannabis users cite for mulling include to make the cannabis burn easier, to make the smoke easier to inhale, to save money by stretching out the cannabis, and to alter the experience of smoking cannabis alone.(6, 10)

In some surveys, cannabis vaporiser users report quitting or reducing tobacco smoking as a benefit of using a vaporiser.(11, 12) In one survey, only two of 96 participants reported mixing tobacco with cannabis in a vaporiser compared with 15 who added tobacco when they smoked cannabis.(12) Participants in online forums give a number of reasons why they do not add tobacco to cannabis when vaping including: vaped tobacco has an unpleasant taste, is harsher on the throat, clogs and dirties the vaporiser, there is no combustion so it is not necessary to add tobacco to assist burning; and vaping is a more efficient way to use cannabis (no wasted smoke between draws) obviating the need to add tobacco to eke out the cannabis.(13, 14)

Some cannabis smokers who are not interested in quitting cannabis are interested in quitting tobacco.(15) For these cannabis users, switching to a vaporiser may present a harm reduction opportunity in addition to any direct reduction in risk from vaping rather than smoking cannabis because they no longer need to mix tobacco with cannabis. As with nicotine vaporisers, more research on the health risks and benefits of vaping cannabis is warranted, and is likely to be welcomed by users. Given the high rates of tobacco smoking among cannabis smokers,(7, 8, 16) the potential for vaporisers to reduce tobacco smoking among cannabis users should also be researched, particularly in countries like Australia where mulling cannabis is common.

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References

1. Budney AJ, Sargent JD, Lee DC. Vaping cannabis (marijuana): parallel concerns to e-cigs? *Addiction*. 2015: Early online.
2. Page B. Ploom and JTI agree to split up, divide heat-not-burn brands. *ECigIntelligence*. 2015 17 February, 2015;Sect. Business News. Available from: <http://ecigintelligence.com/ploom-and-jti-agree-to-split-up-divide-modeltwo-and-pax-brands/>.
3. Williams H. Review: New Pax 2 is one of the best-functioning vaporizers on the market. *The Cannabist* Available from: <http://www.thecannabistco/2015/04/17/pax-2-review-vaporizer-marijuana/33501/>. 2015 Apr 17, 2015.
4. Gartner CE, Hall WD, Borland R. How should we regulate smokeless tobacco products and e-cigarettes? *The Medical Journal of Australia*. 2012;197(11):611-2.
5. Hall W, Gartner C, Forlini C. Ethical issues raised by a ban on the sale of electronic nicotine devices. *Addiction*. 2015;110(7):1061-7.
6. Banbury A, Zask A, Carter SM, van Beurden E, Tokley R, Passey M, et al. Smoking mull: a grounded theory model on the dynamics of combined tobacco and cannabis use among adult men. *Health Promotion Journal of Australia*. 2013;24(2):143-50.
7. Belanger RE, Akre C, Kuntsche E, Gmel G, Suris JC. Adding tobacco to cannabis--its frequency and likely implications. *Nicotine & Tobacco Research*. 2011;13(8):746-50.
8. van Beurden EK, Zask A, Passey M, Kia AM. The Mull Hypothesis: is cannabis use contributing to high tobacco use prevalence among young North Coast males? *NSW Public Health Bull*. 2008;19(3-4):72-4.
9. Patton GC, Coffey C, Carlin JB, Sawyer SM, Lynskey M. Reverse gateways? Frequent cannabis use as a predictor of tobacco initiation and nicotine dependence. *Addiction*. 2005;100(10):1518-25.
10. Burns CB, Ivers RG, Lindorff KJ, Clough AR. Cannabis: a Trojan horse for nicotine? *Australian and New Zealand Journal of Public Health*. 2000;24(6):637.
11. Earleywine M, Van Dam NT. Case studies in cannabis vaporization. *Addiction Research & Theory*. 2010;18(3):243-9.
12. Malouff JM, Rooke SE, Copeland J. Experiences of Marijuana-Vaporizer Users. *Substance Abuse*. 2013;35(2):127-8.
13. Anonymous. Vaporisers: Do you vape tobacco mixed in your weed: *Marijuana.com*; 2008 [cited 2015 15/08/2015]. Available from: <http://www.marijuana.com/community/threads/do-you-vape-tobacco-mixed-in-your-weed.231852/>.
14. Anonymous. Mixing tobacco with weed in a vaporizer: <http://forum.grasscity.com>; 2007. Available from: <http://forum.grasscity.com/recreational-marijuana-use/190408-mixing-tobacco-weed-vaporizer.html>.
15. Amos A, Wiltshire S, Bostock Y, Haw S, McNeill A. 'You can't go without a fag...you need it for your hash'--a qualitative exploration of smoking, cannabis and young people. *Addiction*. 2004;99(1):77-81.
16. Richter KP, Kaur H, Resnicow K, Nazir N, Mosier MC, Ahluwalia JS. Cigarette smoking among marijuana users in the United States. *Subst Abus*. 2004;25(2):35-43.